

REMARKS

Due to the length of the specification herein, Applicants will cite to the paragraph number of the published patent application (PG Pub) of the parent application of the present application, i.e., US 2004/0063366, when discussing the application description, rather than to page and line of the specification as filed.

The rejections under 35 U.S.C. § 103(a) of:

Claims 1, 2, 4, 6-8 and 17-24 as unpatentable over SU 4453003A (Zaveleva et al) in view of US 5,338,613 (Tomotsugu et al), US 6,299,977 (Takeyama et al), JP 09-59881 (Ashida et al), and US 4,914,764 (Mast et al), and

Claims 9-12 as unpatentable over Zaveleva et al in view of Tomotsugu et al, Takeyama et al, Ashida et al, and Mast et al, and further in view of US 4,525,169 (Higuchi et al),

are respectfully traversed.

The Examiner acknowledged in the Office Action of July 9, 2009 at page 2 that the combination of the above-applied references, not including Zaveleva et al and Tomotsugu et al, were insufficient to render the claimed subject matter unpatentable. The Examiner relied additionally on Zaveleva et al in the previous Office Action. The above rejections are identical to the rejections in the previous Office Action, except that the Examiner now additionally relies on Tomotsugu et al.

In reply, the combination of Zaveleva et al and Tomotsugu et al, does not remedy the deficiencies in the combination of the other-applied references.

All the references (except of course Tomotsugu et al) have been discussed in previous responses. The discussions and arguments for patentability are hereby incorporated by reference.

In addition, Zaveleva et al discloses in their Example, in a first step, reacting 2,4-toluene diisocyanate and ethylene glycol monomethacrylic ester (MEG), or hexamethylene diisocyanate and MEG, and then polymerizing the obtained product (isocyanato methacrylate). It would appear that the polymer to be obtained by such reaction is an acrylic polymer having pendant urethane groups. Therefore, the dispersion of Zaveleva et al does not contain urethane polymer or urethane resin.

In contrast, in the claimed invention, the acryl-urethane composite elastomeric polymer is produced by polymerization of an ethylenically unsaturated monomer ((meth)acrylic acid derivative) in the presence of a urethane resin (i.e., urethane polymer) and further a polyfunctional ethylenically unsaturated monomer (crosslinking agent). Thus, the elastomeric polymer of the present invention is a composite of the urethane resin and the acryl resin.

Clearly, the production method, and particularly the starting compounds, are quite different between the claimed invention and Zaveleva et al. It would appear that the difference in starting compounds results in different products, i.e., different polymers.

Tomotsugu et al discloses a photocurable resin composition which comprises a urethane acrylate resin, a crosslinking agent and a photosensitizer. In the crosslinking reaction of Tomotsugu et al, the urethane acrylate resin is crosslinked. The urethane acrylate resin is obtained by (i) reacting a polyester with a polyisocyanate compound to prepare an isocyanate-terminated urethane prepolymer and by adding a polymerizable unsaturated compound such as (meth)acrylate, or (ii) by adding a monofunctional compound such as 2-isocyanatoethyl (meth)acrylate to the terminal hydroxyl group of the polyester (column 2, line 64 to column 3, line 18). The urethane acrylate resin thus obtained is then crosslinked with a monomer such as polyethylene glycol di(methacrylate) (column 3, lines 19-34).

Thus, in Tomotsugu et al, the (meth)acrylic acid derivative is not polymerized, whereas the (meth)acrylic acid derivative is merely added to the terminal end of the polyester polyurethane and merely used as the crosslinking agent. Clearly, the urethane acrylate resin of Tomotsugu et al is not a composite of polyurethane and acrylic polymer, but a urethane resin modified by acrylate.

In addition, in the presently-claimed invention, the crosslinking proceeds during the polymerization of the (meth)acrylic acid derivative in the presence of the urethane resin. Thus, the crosslinking in the claimed invention proceeds in a manner quite different from that of Tomotsugu et al. It would appear that the different manner of crosslinking provides different crosslinked products.

Therefore, even if one were to combine the disclosures of Zaveleva et al and Tomotsugu et al, with Takeyama et al, Ashida et al, and Mast et al alone, or further in view of Higuchi et al, the result would not be the acryl-polyurethane composite elastomeric polymer of the presently-claimed invention.

For all the above reasons, it is respectfully requested that the rejections over prior art be withdrawn.

All of the presently active claims in this application are now believed to be in immediate condition for allowance. The Examiner is respectfully requested to rejoin the non-elected method claims, and in the absence of further grounds of rejection, pass this application to issue with all pending claims.

Respectfully submitted,

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